User Guide

GasTrac

Process Air Heater

Installation

Maintenance

Operation

Troubleshooting

Instant Access
Parts and Service
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UGD014/0497

Please record your equipment's model and serial number(s) and the date you received it in the spaces provided.

It's a good idea to record the model and serial number(s) of your equipment and the date you received it in the User Guide. Our service department uses this information, along with the manual number, to provide help for the specific equipment you installed.

Please keep this User Guide and all manuals, engineering prints and parts lists together for documentation of your equipment.

Date:
Manual Number: UGD014/0497
Serial number(s): ....
Model number(s): ....

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TABLE OF CONTENTS

TABLE OF CONTENTS

INTRODUCTION

PURPOSE OF THE USER GUIDE

This User Guide describes the GasTrac process air heater and explains step-by-step how to install, operate, maintain and repair this equipment.

Before installing this product, please take a few moments to read the User Guide and review the diagrams and safety information in the instruction packet. You also should review manuals covering associated equipment in your system. This review won't take long, and it could save you valuable installation and operating time later.

HOW THE GUIDE IS ORGANIZED

Symbols have been used to help organize the User Guide and call your attention to important information regarding safe installation and operation.

⚠ Symbols within triangles warn of conditions that could be hazardous to users or could damage equipment. Read and take precautions before proceeding.

1 Numbers within shaded squares indicate tasks or steps to be performed by the user.

◆ A diamond indicates the equipment's response to an action performed by the user.

❒ An open box marks items in a checklist.

● A shaded circle marks items in a list.

YOUR RESPONSIBILITY AS A USER

You must be familiar with all safety procedures concerning installation, operation and maintenance of this equipment. Responsible safety procedures include:

- Thorough review of this User Guide, paying particular attention to hazard warnings, appendices and related materials and diagrams.
- Thorough review of the equipment itself, with careful attention to voltage sources, gas supply, intended use and warning labels.
- Thorough review of instruction manuals for associated equipment.
- Step-by-step adherence to instructions outlined in this User Guide.

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine by following the procedures outlined below and elsewhere in the User Guide and related instructional materials.

⚠ ATTENTION: READ THIS SO NO ONE GETS HURT

⚠ WARNING: Follow instructions carefully.

Incorrect installation, operation or maintenance of this product can result in a **fire**, **explosion** or **other hazards** causing property damage, severe personal injury or loss of life.

Only licensed electrical/mechanical contractors, or individuals experienced with the installation of natural gas piping, process air ducting, thermal insulation, exhaust ducting and regional codes for industrial gas appliances, should install the GasTrac.

The GasTrac should be maintained and repaired by qualified technicians who are equipped with the correct tools and are experienced in the maintenance and repair of industrial gas appliances.

Inspection and testing of gas supply piping, exhaust ducting and the GasTrac gas controls and safety features should be performed periodically to ensure safe operation.

⚠ WARNING: If gas odor is detected...

- ❒ Open doors and/or windows to vent the gas.
- ❒ Do not touch electrical switches.
- ❒ Extinguish all open flames.
- ❒ Immediately have qualified personnel determine the source of the gas leak and repair it.

⚠ WARNING: Do not store or place aerosol, compressed gas or flammable materials on or near this equipment.

The hot temperatures associated with the drying process may cause aerosols or other flammable materials placed or stored near the GasTrac to explode.

⚠ ATTENTION: READ THIS SO NO ONE GETS HURT

WARNING: Hot surfaces.

Temperatures inside the GasTrac can reach more than 800˚ F. Always shut down the GasTrac and host dryer and wait for them to cool before servicing. Do not remove the safety guard covering the GasTrac burner and heat exchanger.

WARNING: Disconnect and lock out main power before servicing.

The GasTrac is connected to high voltage. Always disconnect and lock out the main power source to the GasTrac before servicing. Also disconnect and lock out main power to the host dryer before servicing the GasTrac. Failure to disconnect and lock out this voltage source could result in severe personal injury.

WARNING: Shut off main gas supply and purge heat exchanger and gas lines before servicing.

If the fuel train, burner, ultraviolet sensor, sight glass or ignition are to be serviced, it is important that the GasTrac heat exchanger and gas lines are purged of natural gas. Failure to eliminate this potential source of a gas leak could result in severe damage, personal injury or loss of life.

WARNING: Do not operate the GasTrac with safety features disabled or removed.

The GasTrac has been equipped with numerous guards, controls and devices to ensure safe operation. Never remove or disable these devices to sustain production. Operating without these devices could lead to hazardous conditions that can damage the facility or cause severe injury or loss of life.

⚠ CAUTION: Before performing maintenance or repairs on this product, you should disconnect and lock out electrical power sources to prevent injury from unexpected energization or start-up. A lockable device has been provided to isolate this product from potentially hazardous electricity.

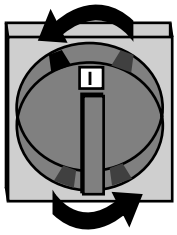
How to Use the Lockout Device

Lockout is the preferred method of isolating machines or equipment from energy sources. Your Conair product is equipped with the lockout device pictured below. To use the lockout device:

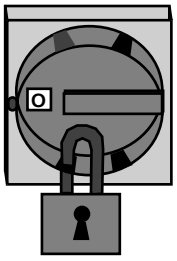
1 **Stop or turn off the equipment**.

2 **Isolate the equipment from electrical power.**

Turn the rotary disconnect switch to Off, or O position.



3 **Secure the device with an assigned lock or tag.**



4 **The equipment is now locked out.**

⚠ WARNING: Before removing lockout devices and returning switches to the ON position, make sure that all personnel are clear of the machine, tools have been removed and all safety guards reinstalled.

DESCRIPTION

WHAT IS THE GASTRAC?

The GasTrac Process Air Heater is a stand-alone, gas-fired heater designed to replace the electric process air heater in an existing dehumidifying dryer or crystalizer. The GasTrac allows plastics processors to convert existing electric equipment to a less-expensive gas source.

The GasTrac contains a metal-ceramic burner, heat exchanger, combustion system and temperature controller to set and maintain the temperature of the air entering a drying hopper. The host dryer's desiccant beds dry the air. The host dryer's process blower circulates air through the GasTrac heat exchanger and the hopper.

TYPICAL APPLICATIONS

The GasTrac can be used successfully in applications that require:

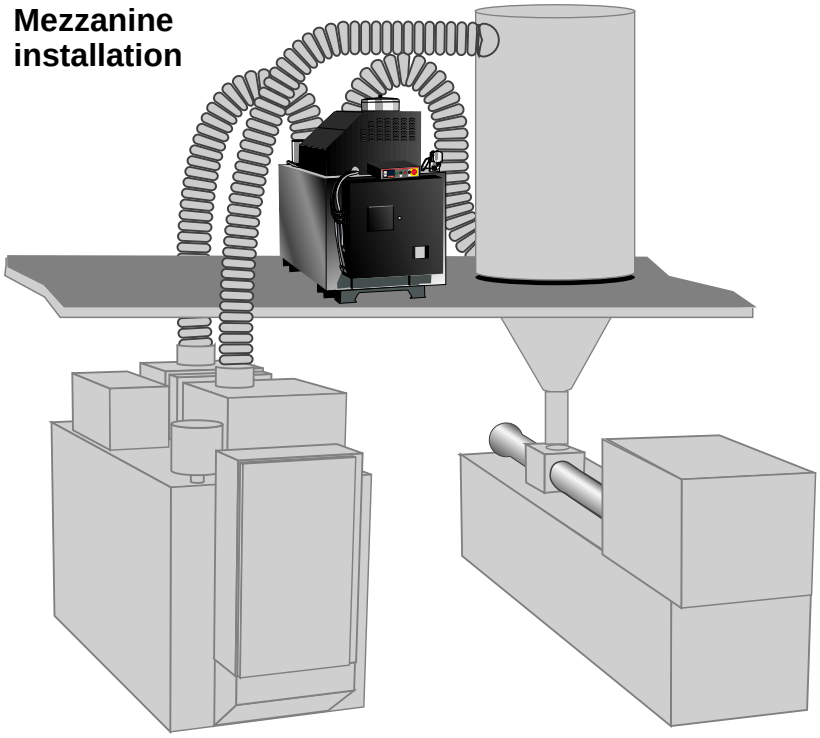
- Drying of hygroscopic plastics at temperatures ranging from 250˚ F to 350˚ F.
- Hot air drying of non-hygroscopic plastics.
- Process, or drying, air flow of 600 to 1800 cfm. Higher or lower air flow ranges may be achieved, depending on the model of the host dryer and the GasTrac selected.
- Central drying, using an existing electric dryer with a single GasTrac or multiple GasTrac units.

The GasTrac has been designed and configured at the factory for use with natural gas only. If you want to use a different gas fuel source, such as propane, you must contact Conair.

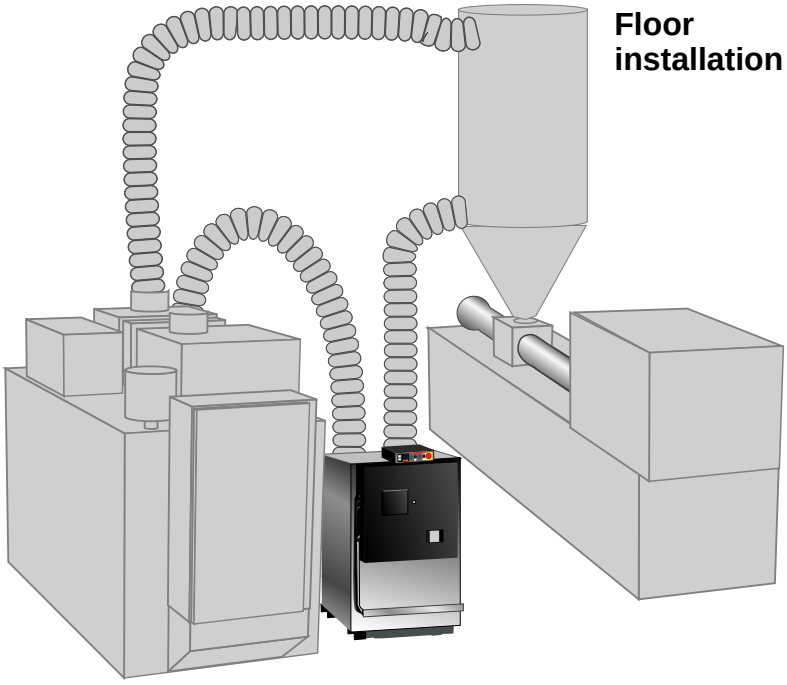
TYPICAL APPLICATIONS

The GasTrac may be installed on a mezzanine or on the floor between the host dryer and the drying hopper. You can use flexible hose or pipe to deliver air between the host dryer, the GasTrac and the drying hopper.

Mezzanine installation



Floor installation



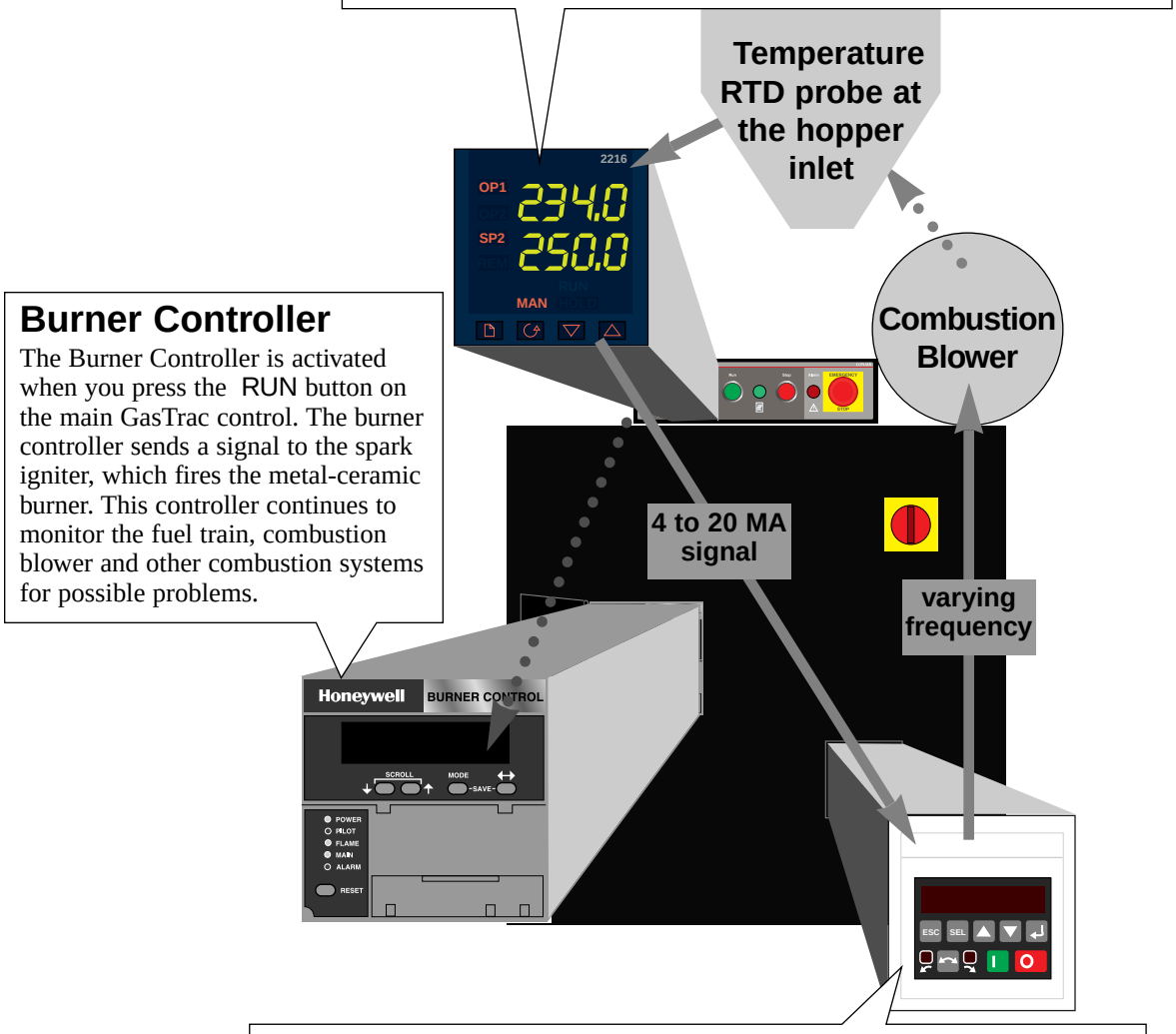
How It Works

The GasTrac has three interfaced controls that:

- Ignite the metal-ceramic burner and monitor the GasTrac combustion circuit.
- Heat the dry air to the setpoint temperature.
- Monitor the air temperature as it enters the drying hopper.
- Automatically adjust the mixture of combustion air and gas to maintain the setpoint temperature.

The Temperature Controller

You enter the setpoint temperature in the Temperature Controller on the main GasTrac control. The temperature controller monitors temperature at the drying hopper inlet. When the actual temperature must increase or decrease to maintain setpoint, this controller sends a 4 to 20 MA signal to the variable speed controller.



Burner Controller

The Burner Controller is activated when you press the RUN button on the main GasTrac control. The burner controller sends a signal to the spark igniter, which fires the metal-ceramic burner. This controller continues to monitor the fuel train, combustion blower and other combustion systems for possible problems.

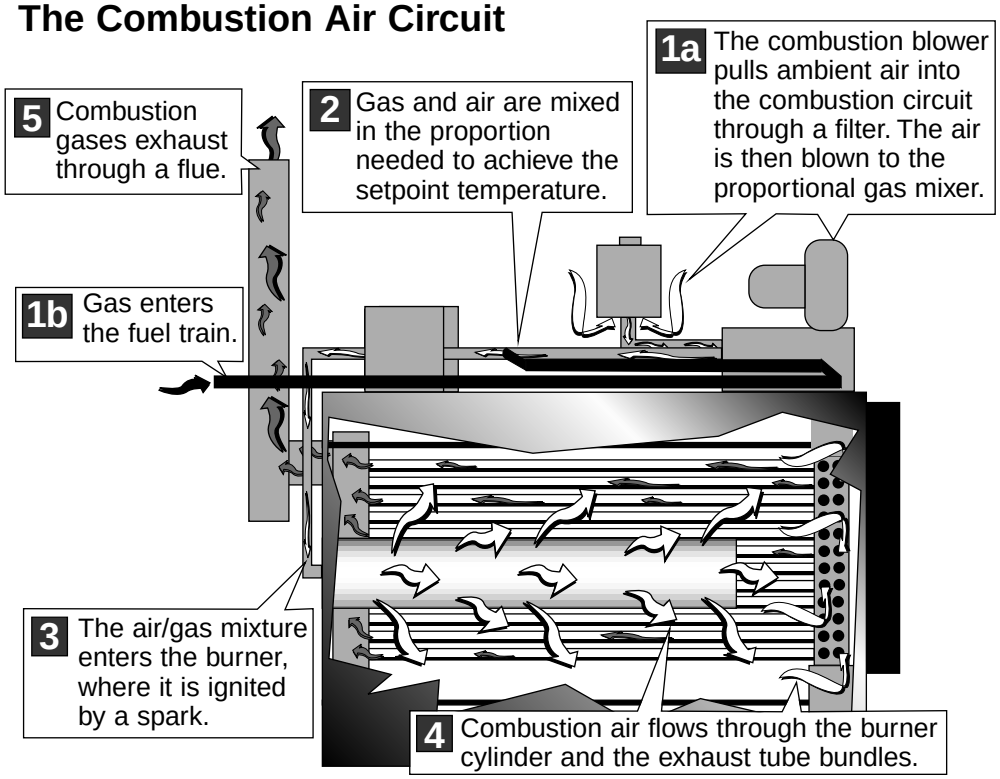
Variable Speed Controller

The Variable Speed Controller automatically adjusts the speed of the combustion blower by varying the frequency and voltage of the signal. Increasing the speed increases the air-to-fuel mixture and the heat output of the burner.

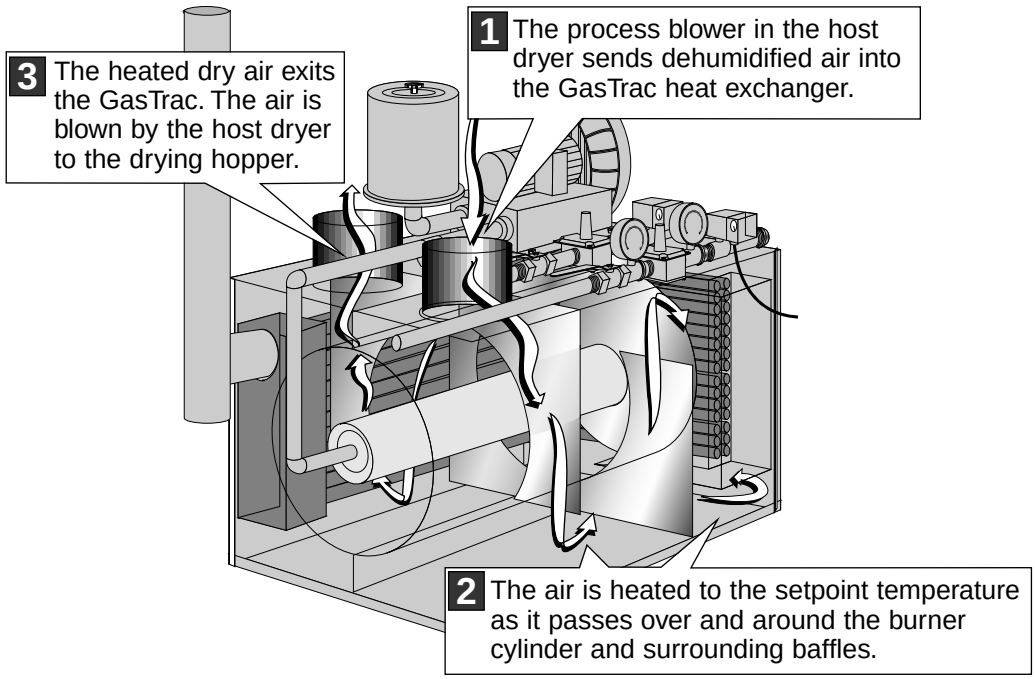
HOW IT WORKS

The GasTrac has two separate air circuits: the combustion air circuit and the process air circuit.

The Combustion Air Circuit



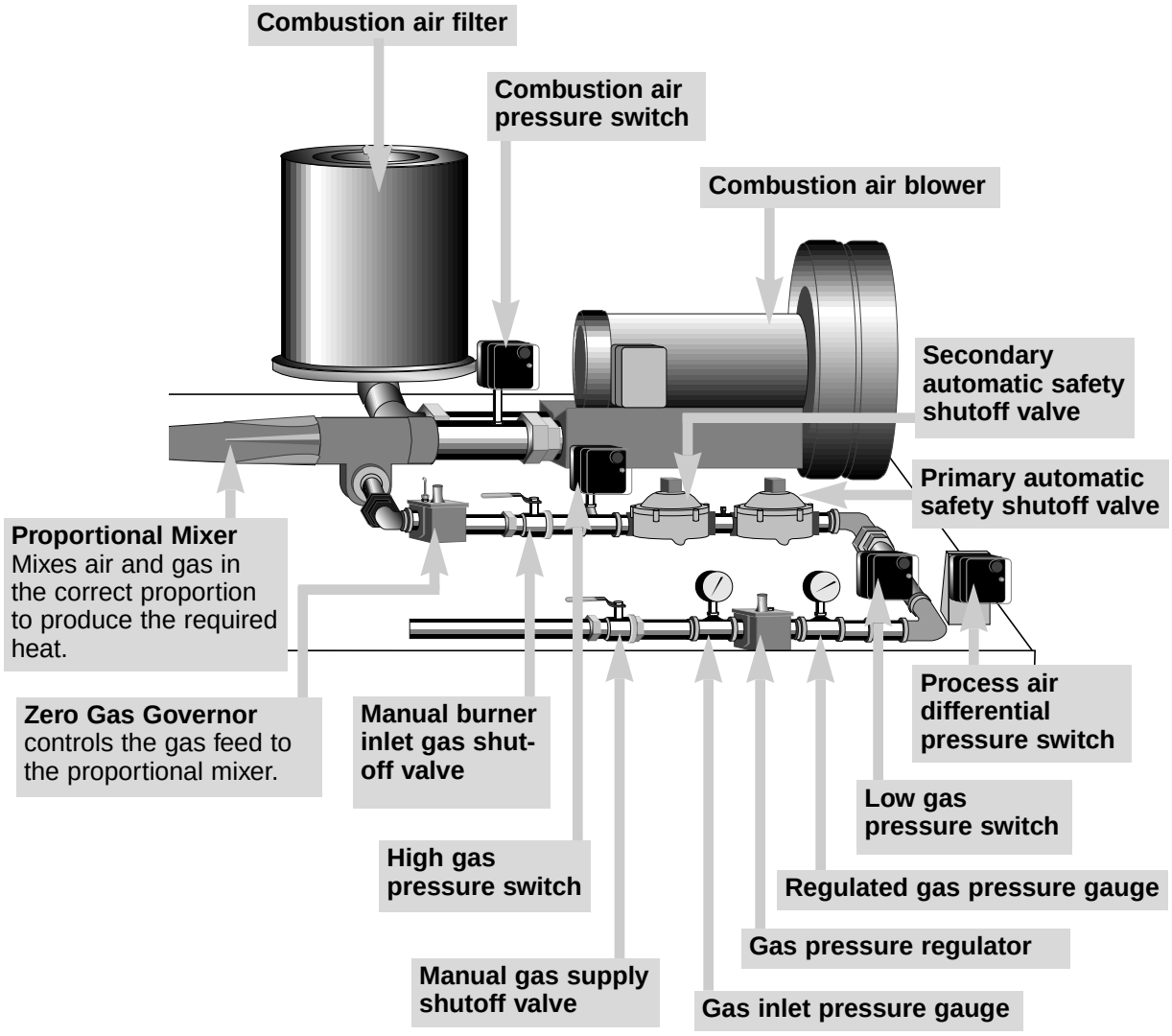
The Process Air Circuit



FUEL TRAIN FEATURES AND CONTROLS

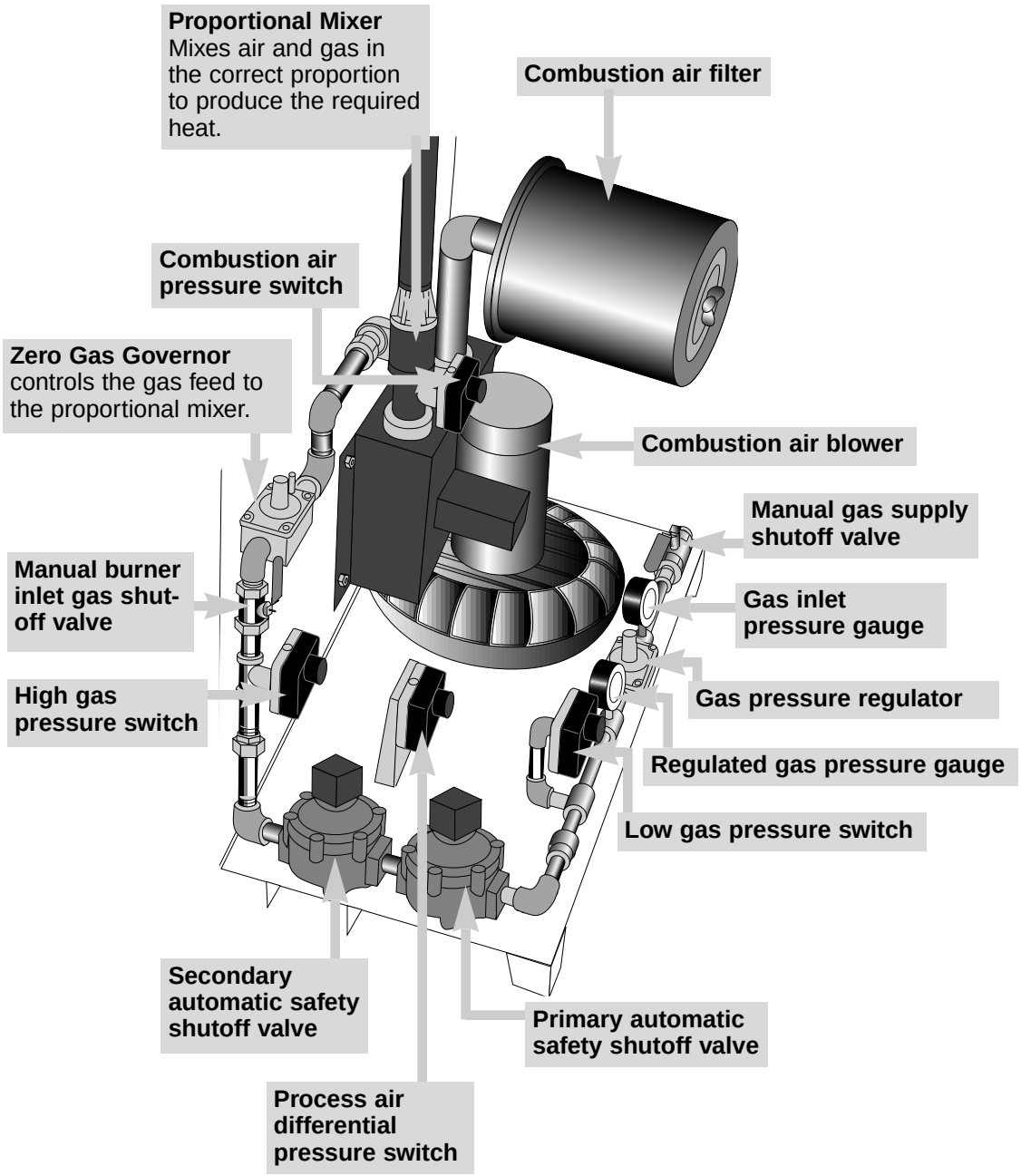
The fuel train includes two automatic and manual safety gas shutoff valves, four pressure switches, and a gas regulator and governor to assure safe feeding of gas to the combustion burner. The four pressure switches monitor gas pressure and process air flow. The GasTrac will automatically shut down if a pressure switch senses an unsafe condition.

GasTrac horizontal models

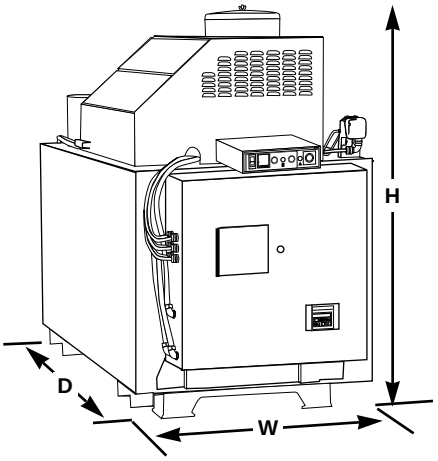


FUEL TRAIN FEATURES AND CONTROLS

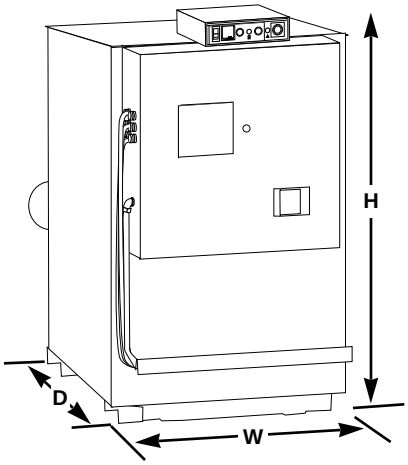
GasTrac upright models



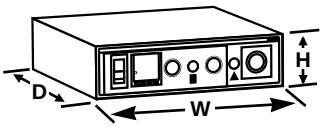
SPECIFICATIONS: GASTRAC



CGTHH horizontal model



CGTHV upright model



Remotable
GasTrac control

Dimensions	H in./cm	W in./cm	D in./cm	Weight lbs/kg	Air inlet/outlet diameter in./cm
CGT700HH Horizontal Model	61/154.9	37/93.9	74/187.9	1115/505.7	12/30
CGT700HV Upright Model	67/170.2	39/99	64/162.6	1115/505.7	12/30
CGT500HH Horizontal Model	61/154.9	37/93.9	64/162.6	880/399.2	8/20.3
CGT500HV Upright Model	65/165.1	39/99	64/162.6	880/399.2	8/20.3
CGT350HH Horizontal Model	54/137.2	29/73.7	66/167.6	695/315.2	8/20.3
CGT350HV Upright Model	58/147.3	31/78.7	56/142.2	695/315.2	8/20.3
Remotable GasTrac control	3.5/8.9	12.5/31.7	6/15.2	—	—

General	CGT700 models	CGT500 models	CGT350 models
Temperature range	250-350˚F / 122-177˚C	250-350˚F / 122-177˚C	250-350˚F / 122-177˚C
Maximum Flue Temperature	750˚F / 399˚C	750˚F / 399˚C	750˚F / 399˚C
Combustion blower	1.5 Hp Peripheral	1 Hp Peripheral	1 Hp Peripheral
Ignition source	Spark igniter, interrupted	Spark igniter, interrupted	Spark igniter, interrupted
Burner type	Metal-ceramic	Metal-ceramic	Metal-ceramic
Minimum burner capacity	150,000 BTU/hr	125,000 BTU/hr	90,000 BTU/hr
Maximum burner capacity	700,000 BTU/hr	500,000 BTU/hr	350,000 BTU/hr
Gas consumption	230 CFH @ 250˚F/1200 CFM 675 CFH @ 350˚F/1800 CFM	150 CFH @ 250˚F/800 CFM 465 CFH @ 350˚F/1200 CFM	105 CFH @ 250˚F/600 CFM 325 CFH @ 350˚F/800 CFM
Gas pressure to regulator	10 - 20 inches of water / 2.49 - 4.98 kilopascals		
Gas pressure from regulator	4 - 7 inches of water / 0.99 - 1.74 kilopascals		
Gas heating value	1000 BTU/ft^3		

Electrical			
Available voltages / Total Amps			
240 V/3 phase/60 Hz	4.8 A	2.5 A	2.0 A
380 V/3 phase/50 Hz	3.0 A	1.6 A	1.3 A
415 V/3 phase/50 Hz	2.7 A	1.5 A	1.2 A
480 V/3 phase/60 Hz	2.4 A	1.3 A	1.0 A
Total Kilowatts	1.9 kw	1.0 kw	0.8 kw

Emissions (all models)

Primary excess air	10% - 30%
Oxygen (O_2) [Ideal 3%-4%]	2% - 5% acceptable range
Carbon Dioxide (CO_2)	9% - 10.5%
Carbon Monoxide (CO)	< 10 ppm corrected to 3% O_2
NOX	< 20 ppm corrected to 3% O_2
Unburned hydrocarbons	< 10 ppm corrected to 3% O_2

All GasTrac models meet: UL 372, UL 795, FM, CGA, AGA, NFPA 54, NFPA 79, NFPA 86 and IAS

NOTE: Elevations 3000 feet above sea level must be specified at time of purchase.

SPECIFICATIONS: EXHAUST FLUE

The Conair GasTrac is classified under the National Fuel Gas Code [ANSI Z233.1] as a Category III gas appliance. An exhaust flue is required to vent the combustion gases produced by this appliance. The purchaser is responsible for installing an exhaust flue that meets all local, regional and national codes in the installation area. For you safety, Conair recommends that you consult a licensed mechanical contractor who is familiar with gas flue and ducting codes in your area.

GasTrac operating characteristics

Maximum flue temperature	750˚F / 399˚C
Minimum vent size (single unit installation)	CGT350: 4 in. / 10.2 cm CGT500: 6 in. / 15 cm CGT700: 6 in. / 15 cm
Vent pressure at flue collar	1 to 2 in. water column

Installation recommendations

- ❒ Provide each GasTrac with a dedicated, vertical stack that exits the building vertically through a rain-protected roof penetration. Limit any horizontal ducting runs to 4 feet.
- ❒ Use a stainless steel, fabricated chimney flue.
- ❒ Vent size should be 6 inches in diameter. If you connect multiple GasTrac units to a stack manifold, adjust the stack size accordingly.
- ❒ Static pressure at the flue collar **must not exceed 1 to 2 inches water column.**
- ❒ Install an induced draft fan between the GasTrac exhaust outlet and stack ducting, if you have more than 1 to 2 inches water column pressure at the flue collar while the GasTrac is operating.

SPECIFICATIONS: MAIN POWER SUPPLY WIRE

The main power wire must be:

- Grounded and secured with a strain relief.
- Correctly sized for the current drawn.

Allowable ampacities of Copper Conductors

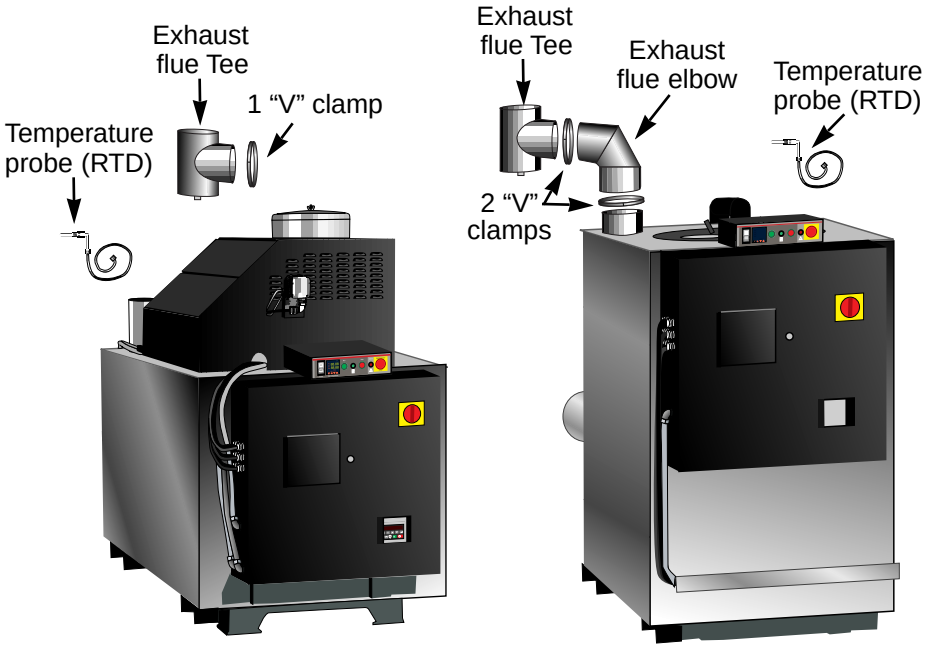
U.S.A. 75˚C insulation 30˚C ambient air	Canada 90˚C insulation 40˚C ambient air		European Community 70˚C insulation; 40˚C ambient air	
Conductor Size AWG	Maximum Full Load Amps	Ground wire Size AWG	Conductor Size mm^2	Maximum Full Load Amps
14	15	13	14	2,5	16
12	20	17	12	4	23
10	30	27	10	6	29
8	43	47	10	10	40

NOTE: Local or regional electrical guidelines may have specifications that differ from the above national codes. You should comply with the codes for your area.

INSTALLATION

UNPACKING THE BOXES

The GasTrac Process Air Heater arrives assembled. The RTD temperature probe is packaged inside the electrical enclosure. Depending on the model and options ordered, you also should receive boxes containing V clamps and piping to attach the GasTrac exhaust to a customer-installed flue.



CGT horizontal model **CGT upright model**

1 **Carefully remove the GasTrac and components** from their shipping containers.

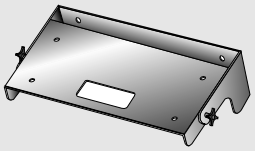
2 **Remove all packing material**, protective paper, tape and plastic. Be sure to examine packing material before discarding. What looks like filler may contain parts, hardware or instructional materials.

3 **Carefully inspect all components.** Make sure you have the correct model and all necessary hardware. Check for any damage that may have occurred during shipping. If you do find freight damage, you should immediately file a damage claim against the delivering carrier.

4 **Take a moment to record serial numbers**, electrical power and gas specifications in the blanks provided on the back of the User Guide title page. This information will be helpful if you ever need service or parts.

5 **You are now ready to begin installation.** Follow all preparation steps beginning on the next page.

Optional Remote Control Bracket



If you ordered the optional bracket for mounting the GasTrac control in a remote location, see the Appendix for installation instructions.

PREPARING FOR INSTALLATION

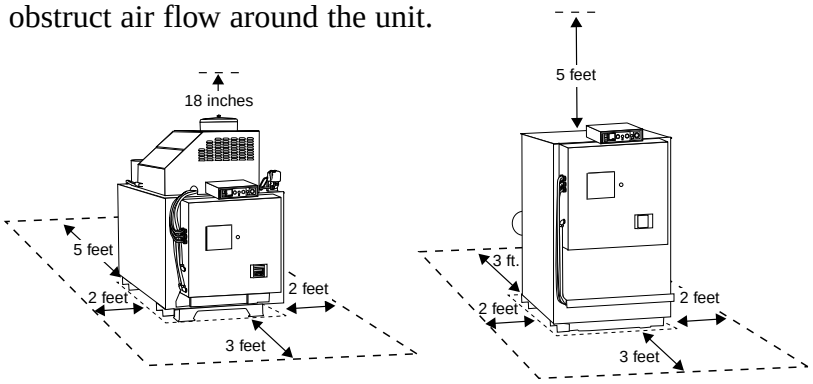
⚠ WARNING: Follow instructions carefully.
Incorrect installation of this product can result in a **fire**, **explosion** or **other hazards** causing property damage, severe personal injury or loss of life. Only licensed electrical/mechanical contractors, or individuals experienced with the installation of natural gas piping, process air ducting, thermal insulation and exhaust ducting, should install the GasTrac.

1 Select a location for the GasTrac. The location:

❒ **Should be between the host dryer and the hopper.** For minimal heat loss, the GasTrac should be no more than 10 feet from the drying hopper. The GasTrac control must be within 10 feet of the drying hopper inlet, unless optional cable extensions for the RTD temperature probe have been purchased.

❒ **Must allow for installation of an exhaust flue** that meets all local, regional and national codes. Ideally, each GasTrac should have a dedicated vertical stack that exits the building through a rain-protected roof penetration.

❒ **Must provide minimum clearance for safe operation and maintenance.** For efficient combustion, you must not obstruct air flow around the unit.



2 Install electrical power to the selected location.

The GasTrac requires a grounded, three-phase power source. Check the GasTrac's serial tag for the correct amps, voltage and cycles for your model. All electrical wiring should be completed by qualified personnel and should comply with government codes in your region.

3 Install gas piping to the selected location.

Gas delivery piping should be sized to provide the rated gas flow to the GasTrac at a delivery pressure of about 12 inches water column (about $^1/_2$ psig). All gas piping should be completed by qualified personnel and should comply with government codes in your region.

NOTE: *For reliable longterm performance, the gas supply line should include:*

- ❒ *A water trap to collect water condensing in the gas line.*
- ❒ *An in-line, basket-type filter to collect rust, pipe scale or welding slag.*

INSTALLING THE GASTRAC

⚠ WARNING: You are responsible for the structural integrity of this installation.

If you are installing the GasTrac on a mezzanine, the host dryer or another device, be sure that the mounting surface can support the weight of the GasTrac. See the specification tables for weights.

⚠ CAUTION: Use a suitable lifting device to move the GasTrac.

The GasTrac models weigh up to 1,400 pounds. Always use a forklift or other suitable lifting device to move the unit. The GasTrac has been equipped with forklift rails.

1 Move the GasTrac to the selected location.
Be sure to position the GasTrac so that you can easily:
- ❒ Connect the gas and main power supplies.
- ❒ Install the flue stack.
- ❒ Connect process air hoses or lines between the host dryer, GasTrac and drying hopper.

2 Secure the GasTrac to the mounting surface.
We have provided 1 $^{3}/_{8}$-inch diameter holes in the base of the GasTrac for bolting the unit to a mounting surface.

DISCONNECTING THE DRYER'S PROCESS AIR HEATER

You must disconnect the host dryer's process heater because the GasTrac replaces it. You will need the wiring diagrams and instruction manuals for your host dryer to determine which wires to disconnect and which air lines to remove or reroute.

1 Disconnect and lock out power to the host dryer. If the dryer has been operating recently, wait for the dryer too cool down before continuing to Step 2.

2 Disconnect the electrical wires between the host dryer control and the process heating elements.

3 Disconnect and reroute the process air lines.
The host dryer's process air outlet must be connected to the GasTrac instead of the drying hopper. To reduce the pressure drop in the process air circuit, you may need to remove the process heater or reroute process air lines within the dryer to bypass the process heater. Refer to the manuals and diagrams that came with your dryer.

INSTALLING THE EXHAUST FLUE

⚠ WARNING: Do not operate the GasTrac without a properly installed exhaust flue.

You must install an exhaust flue to vent the combustion gases produced by the GasTrac. The installation should comply with government codes in your area and be done by a qualified mechanical contractor familiar with industrial flue and ducting systems.

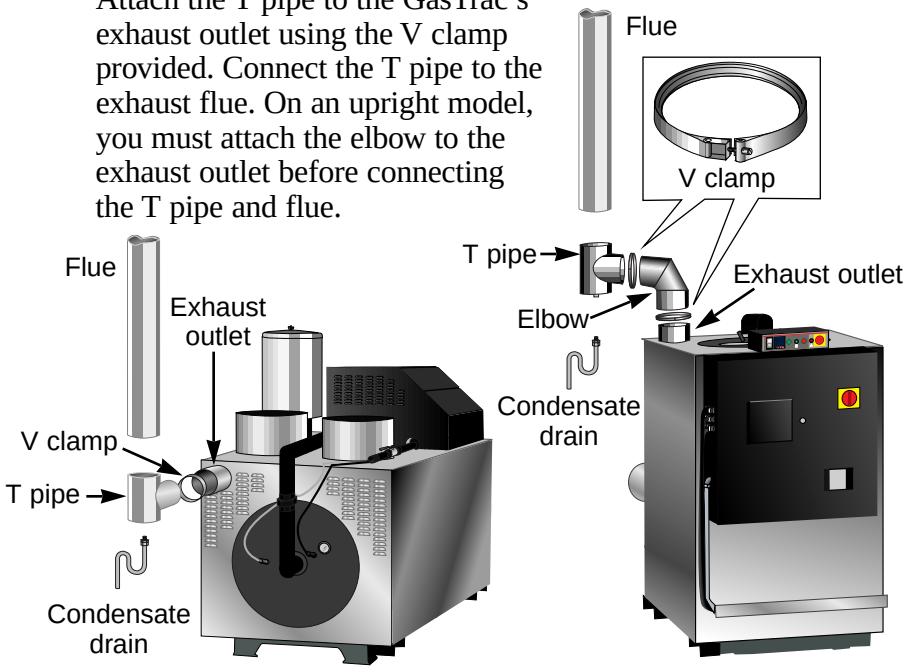
The GasTrac is a forced draft system, using a variable speed combustion blower and a sealed combustion chamber. The temperature of combustion gases in the flue can reach 750˚ F.

1 Install the exhaust ducting and flue.

Consult government codes and a qualified mechanical contractor for detailed installation instructions and assistance. See the SPECIFICATIONS pages of this User Guide for GasTrac operating characteristics and general recommendations.

2 Connect the flue to the GasTrac's exhaust outlet.

Attach the T pipe to the GasTrac's exhaust outlet using the V clamp provided. Connect the T pipe to the exhaust flue. On an upright model, you must attach the elbow to the exhaust outlet before connecting the T pipe and flue.



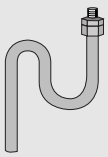
3 Insulate the flue and exhaust T assembly.

Exhaust flue and T temperatures can reach 750˚ F.

4 Install a condensate trap and drain.

Condensate occurs where flue gases cool below their dew point. This condensate can be highly corrosive. Draining and disposal should be done in compliance with applicable safety and environmental codes in your area.

TIP: *A condensate trap and drain can be made by bending a piece of stainless steel tubing. Secure the drain to the T pipe using the appropriate compression fitting.*

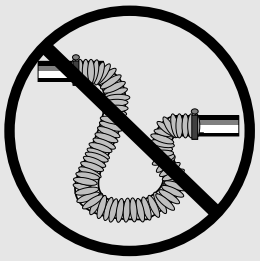


CONNECTING PROCESS AIR LINES

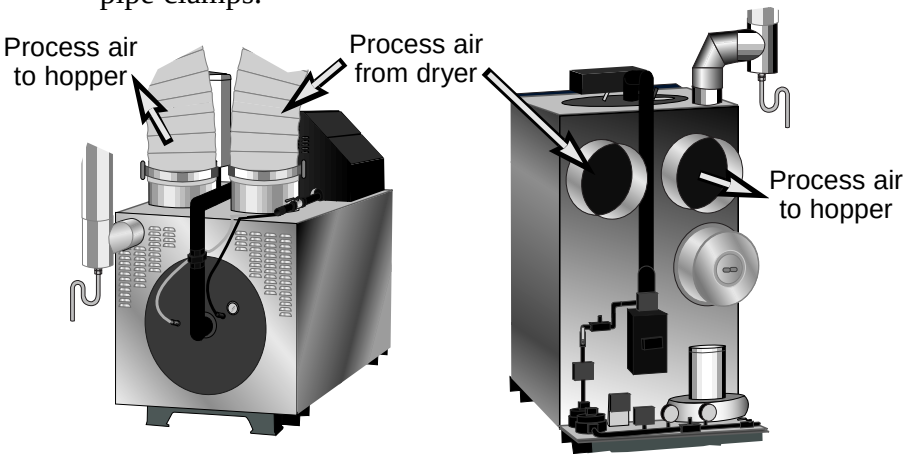
The process air lines carry dehumidified air from the host dryer to the GasTrac, and from the GasTrac to the drying hopper. These air lines can be flexible hose or pipe. The air line between the GasTrac and host dryer can be uninsulated. We recommend an insulated air line between the GasTrac and the drying hopper to minimize heat loss.

1 **Connect the GasTrac process air inlet to the host dryer's process air outlet.** Secure the air lines with hose or pipe clamps.

2 **Connect the GasTrac process air outlet to the drying hopper air inlet.** Secure the air lines with hose or pipe clamps.



NOTE: *Do not allow the flexible hoses to kink or crimp.*



CONNECTING THE GAS SUPPLY

⚠ **WARNING:** For your safety, we recommend that these steps be completed by a qualified mechanical contractor in compliance with all applicable natural gas codes in your region.

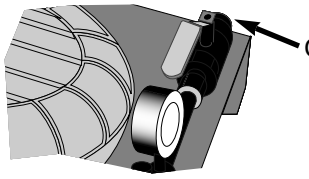
1 **Check all gas lines for leaks.** Use a gas detecting device or apply soapy water around pipe and fittings.

2 **Purge the gas lines** after pipe and fittings are known to be free of leaks. The lines must be free of air, rust, scale, pipe dope and welding slag.

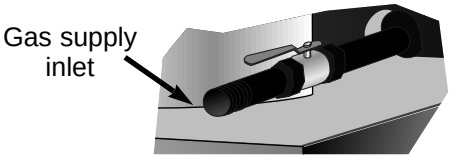
3 **Connect the gas supply line to the inlet** on the GasTrac fuel train. Make sure that a water trap and inline basket filter has been installed on the supply line.

GAS INLET FITTING SIZES

Model	NPT size
CGT350	3/4 in.
CGT500	$^3/_4$ in.
CGT700	1 in.



Upright model

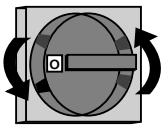


Horizontal model

CONNECTING MAIN POWER

CAUTION: Electrical hazard.
Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.

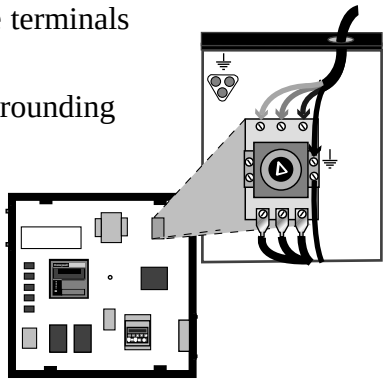
1 **Open the GasTrac electrical enclosure.** Turn the disconnect dial on the GasTrac's door to the Off position. Turn the captive screw, and swing the door open.



2 **Insert the main power wire** through the knockout in the electrical enclosure. Secure the wire with a rubber compression fitting or strain relief.

3 **Connect the power wires** to the three terminals at the top of the disconnect holder.

4 **Connect the ground wire** to either grounding point shown in the diagram.

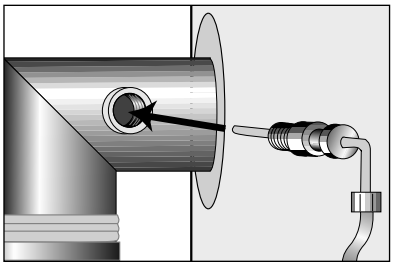


IMPORTANT: Always refer to the wiring diagrams that came with the GasTrac for the most accurate information about electrical components and connections.

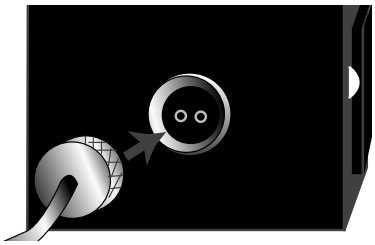
INSTALLING THE RTD PROBE

The RTD probe monitors the temperature of the drying air as it enters the hopper. If the probe is not installed correctly, temperature readings will be inaccurate.

1 **Insert the probe in the delivery air inlet** of the hopper. The end of the probe must not touch the walls of the inlet pipe. Most hoppers provide a hole that is compatible with the probe's $^{1}/_{8}$-inch NPT compression fitting.



2 **Plug the probe's cable into the GasTrac control** box. Coil any excess cable and secure with a wire tie.



GAS AND ELECTRICAL SYSTEM CHECKS

You have completed the installation. Now its time to make sure everything works. Qualified electrical and mechanical personnel should be available during the systems check and the installation test.

1 Check all electrical connections.

- ❒ Shut off power to the unit and verify that the GasTrac and its burner controller are adequately grounded. Inadequate grounding can cause controller error messages and nuisance alarms.
- ❒ With power off to the GasTrac and the host dryer, verify that all terminal connections are tight and all new wiring has adequate strain relief.

2 Check gas piping and ducting.

- ❒ Verify that the gas delivery piping is rigidly supported.
- ❒ Verify that exhaust gas ducting is secured, adequately insulated and free of leaks.

3 Check the GasTrac fuel train for leaks.

Turn on the gas supply to the GasTrac. Open the primary gas shutoff valve. Use a gas leak detection device or a squirt bottle of soapy water to detect leaks around gas pipe and fitting joints. Open the secondary gas shutoff valve, and continue checking for leaks using the same procedure.

⚠ WARNING: Be sure lines are free of leaks.
To prevent accident or injury, all gas lines, including the GasTrac's factory-mounted gas train, should be checked for leaks before firing the burner.

TESTING THE INSTALLATION

1 Start the host dryer.

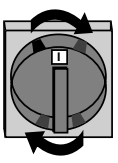
Monitor the dryer during the first few minutes of operation to verify that the start-up operating sequences are correct.

2 Turn on the gas supply to the GasTrac.

All manual shut-off valves in the gas supply line and the GasTrac fuel train must be in the open position. Before proceeding, use a detection device or soapy water to check for gas leaks in the GasTrac fuel train.

3 Turn on main power to the GasTrac.

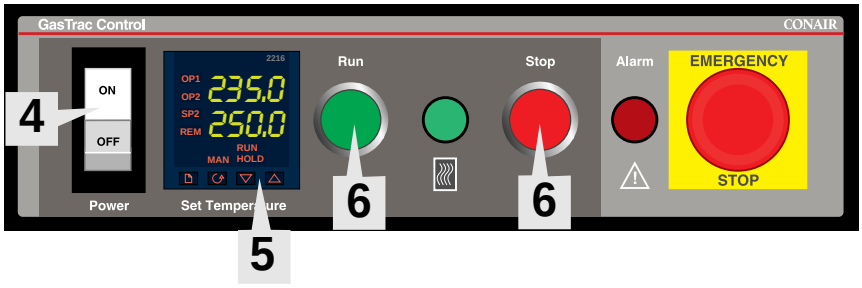
Turn the main disconnect dial to the I or ON position.



If everything is installed correctly:

- ◆ The variable speed control's display will illuminate.

TESTING THE INSTALLATION



4 **Press the Power switch to ON.**

- The Power ON/OFF switch illuminates.
- The temperature controller begins a 3-second self-test. The display will flash between STANDBY and the set-point temperature.
- The Burner Controller begins a 10-second initiation, which ends when the display indicates STANDBY.

5 **Set the drying temperature.**

Press the the up or down arrow on the temperature controller until 250˚F appears in the lower display.

6 **Press the RUN button.**

- The green RUN light will illuminate after the Burner Controller finishes initializing.
- The combustion blower will start and run for 90 seconds to purge any residual gas from the burner.
- After the 90-second purge, the burner will ignite on low fire (low blower speed) for about 15 seconds. The burner will alternate between high and low fire as required to maintain the setpoint temperature.

7 **Verify the combustion blower is rotating in the correct direction.**

The combustion blower uses three-phase blower. Hold a strip of paper or piece of string near the blower inlet filter. If the paper or string blows away from the filter, the blower is rotating in the wrong direction. Stop the GasTrac. Disconnect and lock out the main power source. Reverse any two incoming electrical leads on the blower and repeat the test procedure.

8 **Allow the actual temperature to reach setpoint.**

9 **Press the STOP button.**

- The green RUN indicator light turns off.
- The gas inlet valves should close.
- The combustion blower should stop.
- The burner and temperature controllers should display STANDBY.

10 **Allow the actual temperature to reach setpoint.**

BURNER START UP NOTE: *If the burner fails to ignite and the red alarm light illuminates, there may still be air in the gas lines. Check the burner controller display. If the alarm LED is illuminated, press the reset button on the front of the electrical enclosure. If not, refer to the TROUBLESHOOTING section of the User Guide and the burner controller manual.*

OPERATION

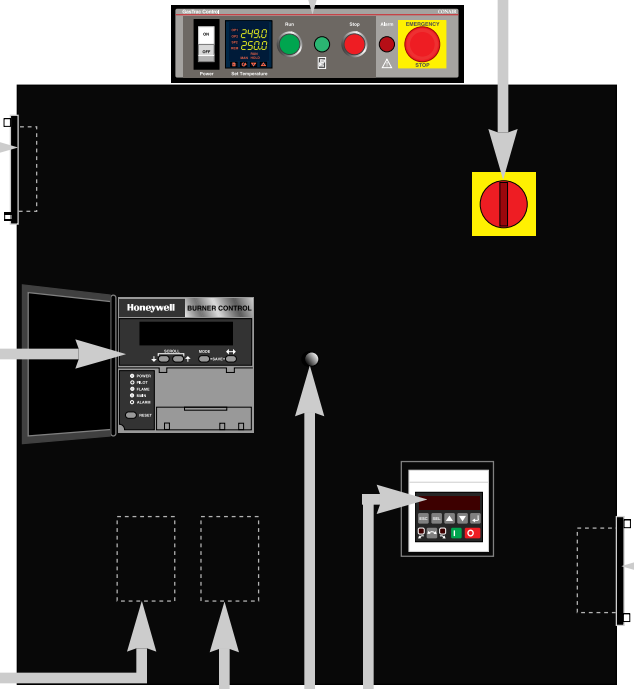
GasTrac Operating Features

The OPERATING section introduces the GasTrac operating features and explains how to use the primary GasTrac control to start and stop drying. For detailed information about the Temperature, Burner and Variable Speed Controllers, see the manufacturer's manuals in the instruction packet.

The GasTrac Control
This is the primary operating control. You turn the GasTrac on or off, enter the set-point drying temperature and start or stop the GasTrac using this remotable control. A green light indicates the GasTrac is running. A red light indicates an alarm condition.

Main Power Disconnect Switch
Turn the lockable dial to provide or disconnect electrical power to the GasTrac.

Cooling Exhaust Filter
Prevents contaminants from entering the electrical enclosure through the exhaust vent.



Burner Controller
The Burner Controller is activated when you press the RUN button on the main GasTrac control. The burner controller sends a signal to the spark igniter, which fires the metal-ceramic burner. This controller continues to monitor the fuel train, combustion blower and other combustion components for possible problems.

Flue Gas High Temperature Limit Switch
Shuts down the GasTrac when the combustion exhaust temperature exceeds 800˚F.

Process High Temperature Limit Switch
Shuts down the GasTrac when the process, or drying, temperature exceeds 450˚F.

Electrical Enclosure Cooling Fan and Filter
Draws outside air through the enclosure to cool electrical components.

High Temperature Limit Switch Reset Button
Push to reset the flue gas and process high temperature limit switches.

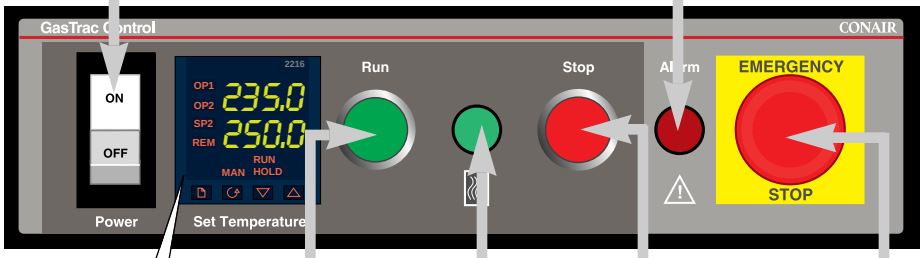
Variable Speed Controller
The Variable Speed Controller automatically adjusts the speed of the combustion blower by varying the frequency and voltage of the signal. Increasing the speed increases the air-to-fuel mixture and the heat output of the burner.

THE GASTRAC CONTROL

The GasTrac control is the primary operator interface. This control may have been mounted in a remote location.

Power On/Off
This switch sends power to the burner controller, the GasTrac control and the process and safeguard relay devices The switch illuminates when power is ON.

Alarm Light
An illuminated light Indicates the GasTrac has shutdown on an alarm condition. The Troubleshooting section will help you identify and correct the problem.



Run Button
Push to start the GasTrac.

Run Light
An illuminated light indicates the GasTrac is operating.

Stop Button
Push to stop the GasTrac.

Emergency Stop Button
Push to shutdown the GasTrac during an emergency. Pull to restore power before restarting.

Temperature Controller

Actual temperature

Setpoint temperature

See the Eurotherm Temperature Controller manual in the instruction packet for a full description of alarm messages, programming modes and parameters.

Up button
Press to increase a value or scroll up through a list.

Down button
Press to decrease a value or scroll down through a list.

Scroll button
Press to scroll through parameter lists to select a parameter to modify.

Page button
Press to select parameter lists during setup and configuration of the controller.

MAN: Indicates the controller is being manually operated by the operator.

SP2: Indicates the controller will control to setpoint #2 when in automatic mode.

OP1: Indicates the variable frequency controller output is active.

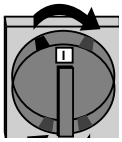
TO START DRYING

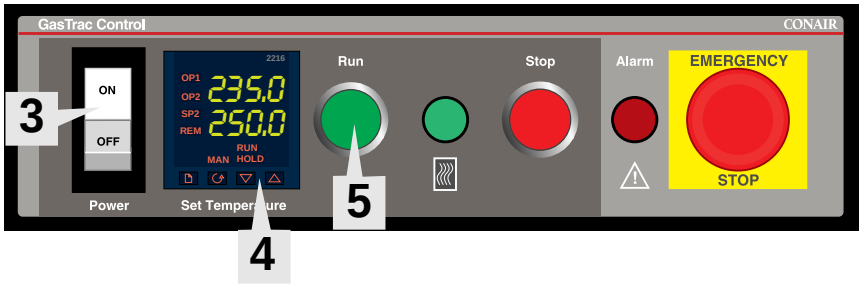
The temperature controller is factory configured to start and operate in automatic mode.

1 **Start the host dryer.**

2 **Turn the main power disconnect to the I or ON position.**

- The variable speed controller turns on.





3 **Press the Power switch to ON.**

- The Power ON/OFF switch illuminates.
- The temperature controller begins a 3-second self-test. The display will flash between STANDBY and the setpoint temperature.
- The Burner Controller begins a 10-second initiation, which ends when the display indicates STANDBY.

4 **Set the drying temperature.**

Press the the up or down arrow on the temperature controller until the recommended drying temperature appears in the lower display.

NOTE: *The temperature units were set at the factory in ˚F or ˚C, as specified in the order.*

To see which temperature unit was set:
Press the ↻ button once. F or C will be displayed.

To change the temperature unit:
See the Eurotherm Temperature Controller manual

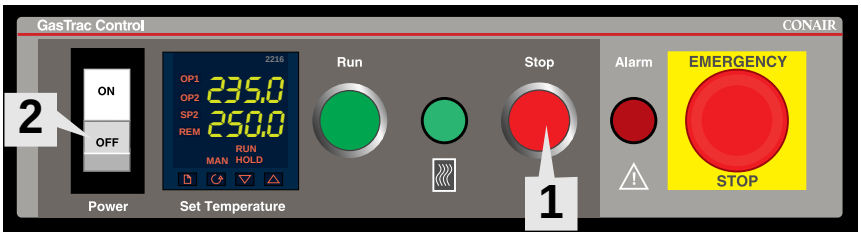
5 **Press the RUN button.**

- The green RUN light will illuminate after the Burner Controller finishes initializing.
- The combustion blower will start and run for 90 seconds to purge any residual gas from the burner.
- After the purge, the burner will ignite on low fire (low blower speed) for about 15 seconds. The burner will alternate between high and low fire as required to maintain the setpoint temperature.

To Stop Drying

IMPORTANT: *Do not shut down the host dryer before stopping the GasTrac.*

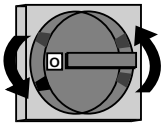
After stopping the GasTrac, allow the host dryer's process blower to continue running for a minimum of 2 minutes. This prevents excessive heat from building up in the GasTrac.



1 Press the red STOP button.
- ◆ The green indicator light turns off.
- ◆ The gas inlet valves should close.
- ◆ The combustion blower should stop.

2 Press the ON/OFF switch to OFF.
- ◆ The burner control turns off.
- ◆ The temperature controller turns off.

3 Turn the main power disconnect off.
- ◆ The variable speed control display remains lit for a brief period. Then it becomes blank.



CAUTION: Voltage present

Some voltage will be present in the variable speed drive for a brief period after power has been turned off. When the voltage is gone, the variable speed control display will become blank.

4 Turn the host dryer off after at least 2 minutes.

MAINTENANCE

PREVENTATIVE MAINTENANCE CHECKLIST

Routine maintenance will ensure optimum operation and performance of the GasTrac. We recommend the following maintenance schedule and tasks.

● Weekly, or as often as needed

❒ **Clean the GasTrac combustion air filter.**
You may need to clean the filter more often than weekly. Frequency depends on the amount of dust in your facility's air.

❒ **Clean the GasTrac electrical enclosure filters.**
You may need to clean the filters more often than weekly. Frequency depends on the amount of dust in your facility's air.

● Monthly

❒ **Inspect air hoses and hose connections.**
Check for damage, kinks or loose hose clamps. Replace any hoses that show signs of damage or wear. Reposition and tighten loose hose clamps.

❒ **Inspect and test safety controls.**
Fuel safety shutoff valves, combustion safeguards and temperature and pressure switches should be inspected and tested by trained personnel.

❒ **Inspect the burner sight glass.**
Clean the sight glass, if needed. Replace the sight glass if you see cracks or any other defect.

● Every six months

❒ **Inspect the GasTrac metal-ceramic burner.**
While the unit is fired, look through the sight glass at the burner. The burner surface should be glowing orange with an even flame. Blue flames, flames projecting from the burner surface, or cracks or dark spots on the burner surface indicate damage. You may need to replace the burner.

❒ **Inspect piping, wiring and electrical connections.**
Check for leaks, corrosion and loose connections. Replace any component that shows signs of damage or wear. Tighten loose connections.

● Annually

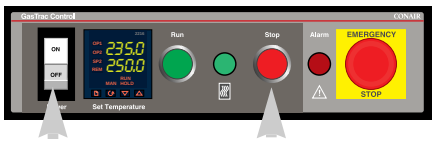
❒ **Replace the spark igniter.**
To assure optimum performance, you should replace the spark igniter once a year.

❒ **Clean the ultraviolet flame detector lens.**
Use alcohol and a soft cloth.

Cleaning The Combustion Filter

You must clean the combustion air intake filter periodically. A clogged filter reduces air flow through the combustion circuit, which reduces burner efficiency and heat output.

1 Stop the GasTrac.
Press the red STOP button, then press the rocker switch to OFF.



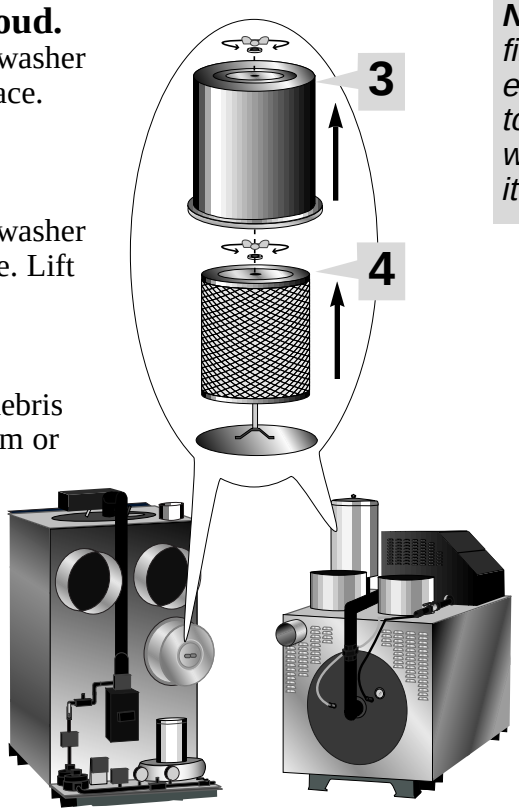
2 Disconnect and lock out main power.

3 Remove the filter shroud.
Remove the wing nut and washer that holds the shroud in place. Lift the shroud up and off.

4 Remove the filter.
Remove the wing nut and washer that holds the filter in place. Lift the filter up and off.

5 Clean the filter.
Vacuum or blow dirt and debris from the filter using vacuum or low-pressure compressed air. When using compressed air, blow from inside the filter toward the outside.

6 Reassemble .
Repeat steps 3 and 4 in reverse order to replace the filter.



NOTE: *Replace any filter that has cracked end gaskets or is torn, worn or clogged with so much dirt that it cannot be cleaned.*

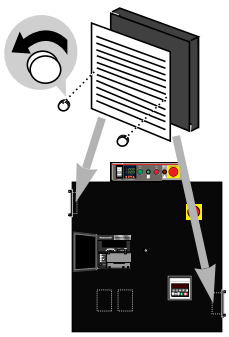
Cleaning The Electrical Enclosure Filters

Periodically, you should clean the filters covering the cooling fan inlet and outlet on the electrical enclosure.

1 Remove the the thumb screws and filters.

2 Clean the filters.
Use vacuum or low-pressure compressed air to remove loose debris. Wash the filters in warm, soapy water, then rinse and air dry. Replace torn or worn filters.

3 Reassemble.



REPLACING THE SPARK IGNITER

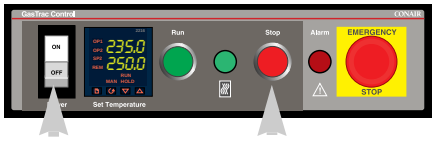
WARNING: Hot surfaces
Allow the GasTrac to cool before removing the burner guard to perform maintenance

The spark igniter should be replaced at least once a year to assure trouble-free operation. You should replace the igniter before the annual period, if you inspect it and find:

- The spark gap is less than 0.125 inch. The gap should be between 0.07 and 0.09 inch.
- The igniter insulation is cracked
- The spark electrodes are warped or taper to a needle-like shape.

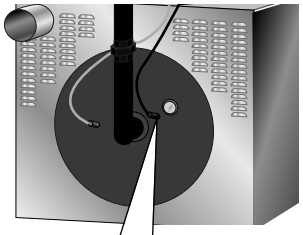
Do not operate the GasTrac with a worn or damaged spark igniter. A badly burned or warped igniter can cause burner ignition failure.

1 Stop the GasTrac.
Press the red STOP button, then press the rocker switch to OFF.



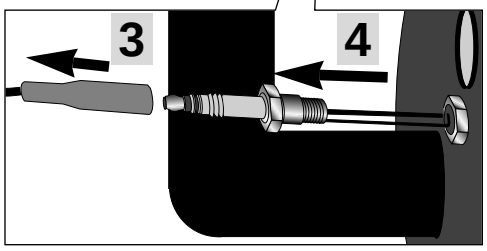
2 Disconnect and lock out main power.

3 Remove the igniter wire.
Pull the wire boot, not the wire, away from the spark igniter. If the wire or its boot is cracked, you should replace it.



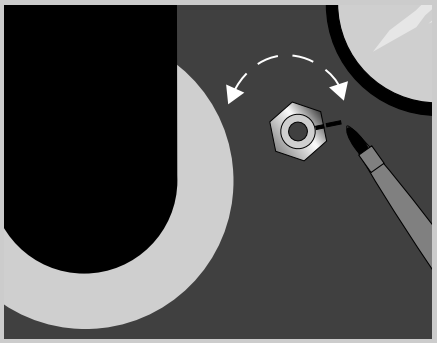
IMPORTANT: *When removing or inserting the spark igniter,* ***do not*** *allow the igniter electrode or grounding rod to touch the burner. You could damage the burner surface.*

4 Remove the spark igniter.
Use a 7/8 inch spark plug socket and ratchet to loosen the igniter. Pull the igniter straight out of the GasTrac. Do not allow the spark igniter to touch the burner surface.



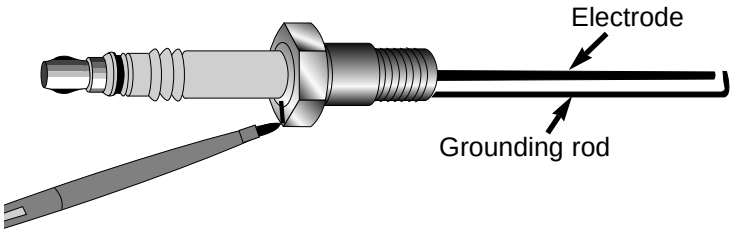
TIP: *Before removing the spark igniter for inspection, use a felt tip marker to mark the position of the igniter in its threaded hole. By indexing the position, you will able to return the igniter to the correct position after inspection.*

The igniter must be installed so that the ground rod is 180˚ away from the burner surface.



REPLACING THE SPARK IGNITER

5 **Mark the position of the grounding rod** on the new spark igniter, using a felt tip marker. This index mark must end up 180˚ away from the burner surface when the spark igniter is inserted and tightened. The electrode should be closest to the burner surface.

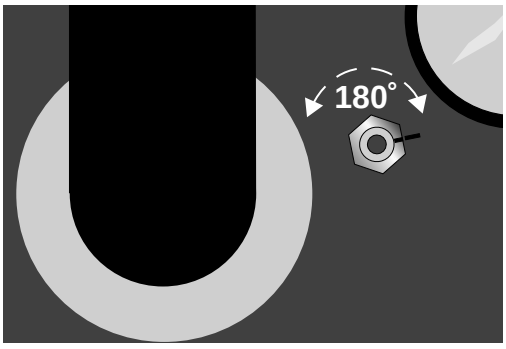


6 **Coat the threads of the igniter** with a high-temperature conductive anti-seize compound.

7 **Carefully insert the igniter into GasTrac.** Insert the igniter straight into the threaded fitting. Do not bend the electrode, and do not allow the spark igniter to touch the burner surface.

8 **Screw the igniter into the threaded fitting.**

Tighten by hand first. Then use a socket and ratchet to tighten the igniter one turn or a partial turn until the index mark on the igniter is 180˚ away from the burner surface.



WARNING: *Do not over tighten the spark igniter. You could damage the porcelain insulator.*

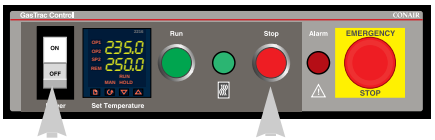
9 **Push the boot and wire onto the spark igniter.** Push until you feel the boot snap into place.

CLEANING THE ULTRAVIOLET FLAME DETECTOR

WARNING: Hot surfaces
Allow the GasTrac to cool before removing the burner guard to perform maintenance

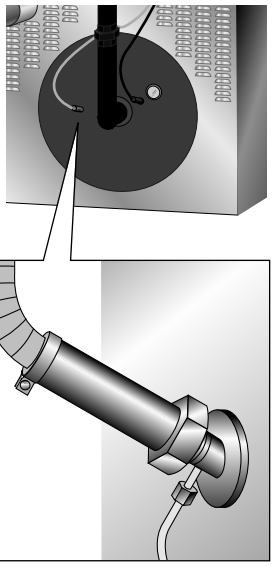
A dirty ultraviolet flame detector may fail to recognize burner ignition, which will cause the GasTrac to alarm and shut down automatically.

1 **Stop the GasTrac.**
Press the red STOP button, then press the rocker switch to OFF.



2 **Disconnect and lock out main power.**

3 **Remove the flame detector.**
Loosen the mounting nut while holding the flame detector, then pull the detector away from the viewing hole.



4 **Clean the viewing hole lens.**
Use a soft cloth or cotton swab moistened with alcohol.

5 **Replace the flame detector.**
Align the detector over the viewing hole, and thread the silver mounting nut onto the coupling. Hand tighten first. Then use a wrench to tighten the nut an additional quarter turn.

CLEANING THE BURNER SIGHT GLASS

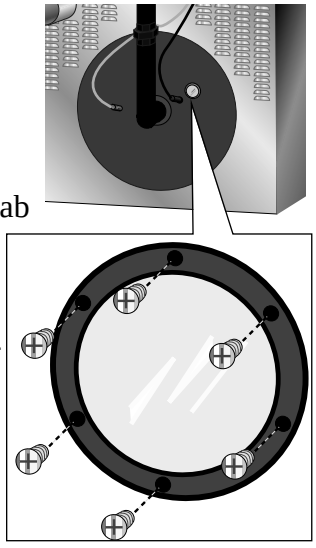
WARNING: Hot surfaces
Allow the GasTrac to cool before removing the burner guard to perform maintenance

A dirty sight glass prohibits inspection or viewing of the metal-ceramic burner during operation.

1 **Stop the GasTrac. Disconnect and lock out main power.**

2 **Remove the screws on the sight glass bracket.**

3 **Clean the sight glass.**
Use a clean soft cloth or cotton swab moistened with alcohol.



4 **Coat the screw threads** with a high-temperature anti-seize compound.

5 **Replace the sight glass.**
Tighten the screws in the bracket to hold the glass in place.

TROUBLESHOOTING

BEFORE BEGINNING

You can avoid most problems by following the recommended installation and maintenance procedures outlined in this Users Guide. If you do have a problem, this section will help you determine what caused it and tell you how to fix it.

Before you begin troubleshooting:

- ❒ **Find the wiring and assembly diagram** you received with your GasTrac. These diagrams will note any custom features such as special wiring or alarm capabilities not covered in the User Guide.
- ❒ **Find the instruction manuals and diagrams** that were shipped with the GasTrac and your host dryer.
- ❒ **Find any installation diagrams** or notes which may have been generated at the time the GasTrac was installed.

A FEW WORDS OF CAUTION

WARNING: The GasTrac should be maintained and repaired by qualified technicians who are equipped with the correct tools and are experienced in the maintenance and repair of industrial gas appliances.

WARNING: Hot surfaces.

Temperatures inside the GasTrac can reach more than 800˚ F. Always shut down the GasTrac and host dryer and wait for them to cool before servicing.

WARNING: Disconnect and lock out main power before servicing.

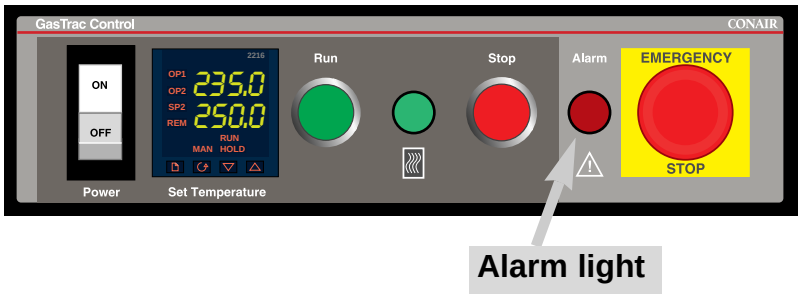
The GasTrac is connected to high voltage. Always disconnect and lock out the main power source to the GasTrac before servicing. Also disconnect and lock out the main power to the host dryer before servicing the GasTrac. Failure to disconnect and lock out this voltage source could result in severe personal injury.

WARNING: Shut off main gas supply and purge heat exchanger and gas lines before servicing.

Failure to eliminate this potential source of a gas leak could result in severe damage, personal injury or loss of life.

When an Alarm Occurs

When there is a problem with the GasTrac the alarm light will illuminate and the GasTrac will shutdown.



How to Identify the Cause of an Alarm

The single alarm may be caused by any one of five major control components or another device within the GasTrac.

Control components and indications of failure:

- **Temperature controller**
  Displays a flashing alarm message.
- **Burner controller**
  Displays a flashing alarm message.
- **Variable speed controller**
  Displays a flashing alarm message.
- **Process outlet high temperature limit switch**
  Verify switch contact closure.
- **Flue gas high temperature limit switch**
  Verify switch contact closure.

1 **Check the controllers for alarm messages.**
Causes of the more probable alarm messages can be found in this section of the User Guide. If you don't find the alarm message here, then see the manufacturer's manual for that particular controller. These manuals can be found in the instruction packet that came with your GasTrac.

2 **Check the limit switches for contact closure.**
Possible causes of switch failure can be found in this section of the User Guide.

3 **Check the GasTrac electrical and gas systems.**
These checks should be performed only by trained electrical and gas technicians equipped with the proper tools.

TEMPERATURE CONTROLLER ALARMS

The Temperature Controller will flash an alarm message in the upper or lower display window.

⚠ **WARNING:** The GasTrac should be tested and repaired only by qualified technicians equipped with the correct tools and trained in the maintenance and repair of electrical systems and industrial gas appliances.

Alarm	Possible cause	Solution
1dEV Deviation Band The drying, or process circuit, temperature is higher or lower than the set-point alarm band allows.	**Is something blocking or restricting the flow of drying, or process, air?**	❒ Check the process filter in the host dryer. Clean or replace the filter if it is clogged or damaged. ❒ Check the process air hoses for leaks, crimps, blockage or loose connections. Remove obstructions. Repair leaks or loose connections. ❒ Check the process air blower in the host dryer. If it is not running correctly, see the dryer's manual.
	Is the RTD temperature probe installed correctly?	Make sure the sensing end of the RTD probe is positioned near the center of the process air line at the hopper inlet. Temperature readings will be incorrect if the sensing end is too close to the wall of the inlet hose or pipe.
	Is the temperature range for the deviation band too narrow?	Increase the deviation band 5˚F at a time. The default setting is 20˚F. To avoid nuisance alarms, do not adjust this band more than necessary.
S.br Sensor Break The sensor input for RTD temperature probe has failed.	**Is the RTD temperature probe connection loose or incorrectly installed?**	❒ Verify that the RTD temperature probe is installed. ❒ Check for a loose RTD connection at the GasTrac control or the process air inlet of the hopper.
	Is the RTD temperature probe damaged?	Replace the RTD temperature probe.

The Temperature Controller will flash an alarm message in the upper or lower display window.

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TEMPERATURE CONTROLLER ALARMS

Alarm	Possible cause	Solution
L.br Loop Break The actual drying temperature did not approach the setpoint within the loop break time. There may be a problem in the combustion or process air circuit.	**Is something blocking or restricting the flow of drying, or process, air?**	❒ Check the process filter in the host dryer. Clean the filter, or replace it if it is damaged. ❒ Check the process air hoses for leaks, crimps, blockage or loose connections. Remove obstructions. Repair leaks or loose connections. ❒ Check the process air blower in the host dryer. If it is not running correctly, see the dryer's manual.
	Is the GasTrac combustion air filter dirty?	Clean the combustion air filter. Replace the filter if it is torn or too clogged with dirt to clean.
	Is the Variable Speed Controller operating correctly?	Check the Variable Speed Controller for error or alarm messages. See the Variable Speed Controller pages in this TROUBLESHOOTING section and in the Allen-Bradley controller manual.
	Is the setpoint correct?	Make sure the setpoint is within the range specified for your GasTrac unit.
Pwr.F Power Failure The line voltage to the Temperature Controller is too low.	**Is the GasTrac being supplied with the correct voltage?** **Is there a loose or faulty connection in the electrical circuit?**	Check the main power supply to the GasTrac and the electrical circuits supplying power to the control panel and the temperature controller.

TEMPERATURE CONTROLLER ALARMS

The Temperature Controller will flash an alarm message in the upper or lower display window.

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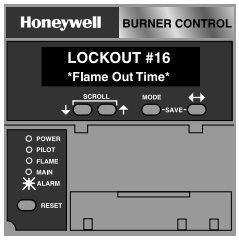
Alarm	Possible cause	Solution
Err1 The ROM self test failed.	**The temperature controller is defective.**	Replace the temperature controller, or return it to the factory for repair.
Err2 The RAM self test failed.	**The temperature controller is defective.**	Replace the temperature controller, or return it to the factory for repair.
Err3 Watchdog Failure	**The temperature controller is defective.**	Replace the temperature controller, or return it to the factory for repair.
Err4 Keyboard failure.	**A button on the temperature controller keypad is stuck or was pressed during power up.**	Switch the power to the GasTrac control off and the on using the POWER ON/OFF switch. Do not touch any buttons on the temperature controller.
Err5 Input Circuit Failure	**The temperature controller is defective.**	Replace the temperature controller, or return it to the factory for repair.



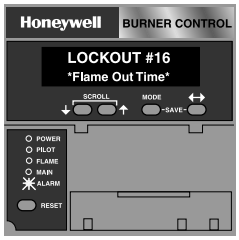
BURNER CONTROLLER ALARMS

When there is a problem related to the burner or ignition, the burner controller displays a fault code and illuminates an alarm light. To restart the GasTrac after a burner controller alarm:

1. Press the GasTrac STOP button.
2. Press the burner RESET button.
3. Press the GasTrac RUN button.

Alarm	Possible cause	Solution
LOCKOUT #16 *Flame Out Timer* Flame did not occur within the 4-second flame establishing period.	**Is the spark igniter providing a spark?**	Restart the GasTrac while watching through the sight glass. If you don't see a spark during the 4-second ignition period: ❒ Verify there is power supplied to the transformer during the ignition period. ❒ Check the wire and connections between the transformer and spark igniter. ❒ Check the spark igniter. Replace if damaged.
⚠ **WARNING:** The GasTrac should be tested and repaired only by qualified technicians equipped with the correct tools and trained in the maintenance and repair of electrical systems and industrial gas appliances.	**Is there a problem with the gas supply?**	If the burner fails to light even though you can see a spark: ❒ Verify that the gas supply is on and that the gas shutoff valves are open during the ignition period. ❒ Restart the GasTrac 4 or 5 times to purge any air that may be in the gas lines. ❒ Verify that the gas pressure regulator is set to supply the correct pressure.
	Is the lens of the ultraviolet sensor dirty?	If the burner ignites and then goes out, check the lens for dirt. Clean if necessary.
	Is negative pressure in the building affecting static pressure of the combustion exhaust flue?	Verify that the static pressure of the combustion exhaust flue is 1 to 2 inches of water column. If not, you may need to add a draft fan to the flue to create the correct static pressure.
	Is the burner controller defective?	If none of the solutions above can resolve the problem, you may need to replace the burner controller.

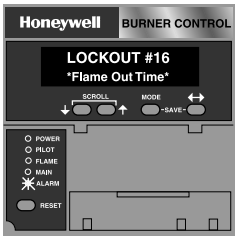
BURNER CONTROLLER ALARMS



When there is a problem related to the burner or ignition, the burner controller displays a fault code and illuminates an alarm light. To restart the GasTrac after a burner controller alarm:

1. Press the GasTrac STOP button.
2. Press the burner RESET button.
3. Press the GasTrac RUN button.

Alarm	Possible cause	Solution
LOCKOUT #17 *Main Flame Fail* The main flame failed after RUN was pushed and the flame had been established for at least 10 seconds. ⚠ **WARNING:** The GasTrac should be tested and repaired only by qualified technicians equipped with the correct tools and trained in the maintenance and repair of electrical systems and industrial gas appliances.	**Are the gas shutoff valves open?**	❒ Verify that the manual gas shutoff valves are open. ❒ Verify that the automatic gas shutoff valves remain open after burner ignition. If automatic shutoff valves are not opening, check the solenoid electrical connections.
	Did the ultraviolet flame detector fail to send an adequate signal?	During operation, the flame signal should fluctuate between 1.25V and 5V D.C. ❒ Verify that the ultraviolet flame detector lens is clean. ❒ Check for blockage in the cooling air line between the ultraviolet sensor and combustion air blower. The temperature at the sensor must be less than 215˚F. ❒ The sensor or flame amplifier may need to be replaced.
	Are the safety pressure switches malfunctioning or detecting incorrect pressures?	Reset the GasTrac, press RUN and check the LED lights on the process air, combustion air, low gas and high gas pressure switches during the 90-second purge cycle. If a light is not green, check for leaks, blockage or other problems that could interfere with air or gas flow detected by that switch.
	Is the gas pressure regulator adjusted correctly?	Make sure the gas pressure regulator is adjusted to supply the pressure outlined in the SPECIFICATIONS pages.



BURNER CONTROLLER ALARMS

When there is a problem related to the burner or ignition, the burner controller displays a fault code and illuminates an alarm light. To restart the GasTrac after a burner controller alarm:

1. Press the GasTrac STOP button.
2. Press the burner RESET button.
3. Press the GasTrac RUN button.

Alarm	Possible cause	Solution
LOCKOUT #23 **OR** **LOCKOUT #32**	**Is the combustion blower intake filter clogged?**	Clean the filter. Replace the filter if it is worn, torn or so clogged with dirt that it can't be cleaned.
	Are the safety pressure switches malfunctioning or detecting incorrect pressures?	Reset the GasTrac, press RUN and check the LED lights on the process air, combustion air, low gas and high gas pressure switches during the 90-second purge cycle. If a light is not green, check for leaks, blockage or other problems that could interfere with air or gas flow detected by that switch.
	Did the airflow interlock fail closed?	Switch the burner controller RUN/TEST button to TEST. Press the RUN button on the GasTrac control. Measure the voltage between terminal 7 and G (ground). You should find 120V present if the interlock is working.

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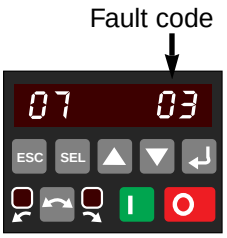
VARIABLE SPEED CONTROLLER ALARMS



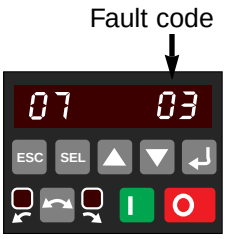
When a problem occurs, the variable speed controller displays the parameter 07 and a two-digit fault code. You must correct the problem before restarting the GasTrac. To restart after an alarm:

1. Turn the power disconnect OFF then ON.
2. Press the GasTrac RUN button.

⚠ **WARNING:** The GasTrac should be tested and repaired only by qualified technicians equipped with the correct tools and trained in the maintenance and repair of electrical systems and industrial gas appliances.

Alarm	Possible cause	Solution
07 03 Power Loss	**DC Bus Voltage remained below 85% nominal for more than 5 seconds on power up.**	Check for proper incoming AC voltage.
07 04 Under Voltage	**DC Bus Voltage fell below the minimum.**	Check for low incoming AC voltage or power interruption. The under voltage trip point for 200-240 VAC units is: 210 VDC, which is equal to 150 VAC incoming voltage. The under voltage trip point for 380-460 VAC units is: 390 VDC, which is equal to 275 VAC incoming voltage.
07 05 Over Voltage	**DC Bus Voltage exceeded the maximum.**	Bus over voltage may be caused by motor regeneration. Check for high incoming AC voltage. The over voltage trip point for 200-240 VAC units is: 410 VDC, which is equal to 290 VAC incoming voltage. The under voltage trip point for 380-460 VAC units is: 815VDC, which is equal to 575 VAC incoming voltage.
07 06 Motor Stall	**Motor has stalled.**	Check for physical or mechanical blockage of the combustion blower fan.

VARIABLE SPEED CONTROLLER ALARMS



When a problem occurs, the variable speed controller displays the parameter 07 and a two-digit fault code. You must correct the problem before restarting the GasTrac. To restart after an alarm:

1. Turn the power disconnect OFF then ON.
2. Press the GasTrac RUN button.

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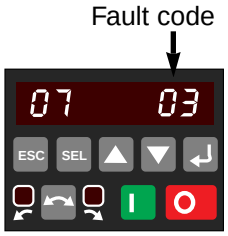
Alarm	Possible cause	Solution
07 07 Motor Overload	**The internal electronic overload tripped.**	❒ Check for physical or mechanical blockage of the combustion blower fan. ❒ Check for a faulty combustion blower motor.
07 08 Over Temperature	**Excessive heat was detected in the variable speed control.**	❒ Clean the air filters on both sides of the GasTrac electrical enclosure. Verify that the cooling fan in the electrical enclosure is operating correctly. ❒ Check for dirty or blocked heat sink passages or a faulty fan inside the variable speed controller.
07 12 Over current	**Excessively high current was detected in the hardware trip circuit.**	❒ Check for a short circuit at the variable speed control output. ❒ Check for physical or mechanical blockage of the combustion blower fan.
07 32 EEPROM Fault	**The controller EEPROM has invalid data.**	Reset EEPROM. See Resetting Factory Defaults in the Allen Bradley variable speed controller manual.

VARIABLE SPEED CONTROLLER ALARMS



When a problem occurs, the variable speed controller displays the parameter 07 and a two-digit fault code. You must correct the problem before restarting the GasTrac. To restart after an alarm:

1. Turn the power disconnect OFF then ON.
2. Press the GasTrac RUN button.

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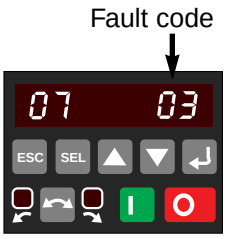
Alarm	Possible cause	Solution
07 38 Phase U Fault	**The controller has detected a phase U-to-ground fault between the controller and combustion blower motor.**	❒ Check the wiring between the control and motor for damage or incorrect connections. ❒ Make sure the motor ground is wired correctly.
07 39 Phase V Fault	**The controller has detected a phase V-to-ground fault between the controller and combustion blower motor.**	❒ Check the wiring between the control and motor for damage or incorrect connections. ❒ Make sure the motor ground is wired correctly.
07 40 Phase W Fault	**The controller has detected a phase W-to-ground fault between the controller and combustion blower motor.**	❒ Check the wiring between the control and motor for damage or incorrect connections. ❒ Make sure the motor ground is wired correctly.
07 41 Phase UV Short Fault	**Excessive voltage was detected between the U and V controller output phases.**	❒ Check for a shorted condition in the wiring to the controller. ❒ Check motor wiring for a shorted condition.
07 42 Phase UW Short Fault	**Excessive voltage was detected between the U and W controller output phases.**	❒ Check for a shorted condition in the wiring to the controller. ❒ Check motor wiring

VARIABLE SPEED CONTROLLER ALARMS



When a problem occurs, the variable speed controller displays the parameter 07 and a two-digit fault code. You must correct the problem before restarting the GasTrac. To restart after an alarm:

1. Turn the power disconnect OFF then ON.
2. Press the GasTrac RUN button.

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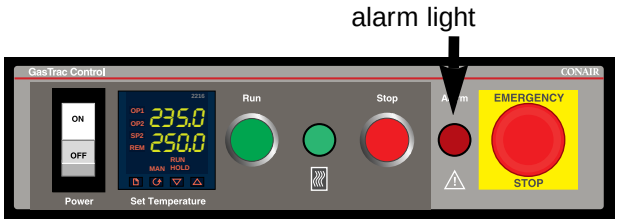
Alarm	Possible cause	Solution
07 43 Phase VW Short Fault	**Excessive voltage was detected between the V and W controller output phases.**	❒ Check for a shorted condition in the wiring to the controller. ❒ Check motor wiring
07 48 Power Test Fault	**An electrical fault was detected during the initial start-up sequence.**	❒ Check wiring to the controller.. ❒ Check wiring to the motor.

Flue Gas High Temperature Limit Switch

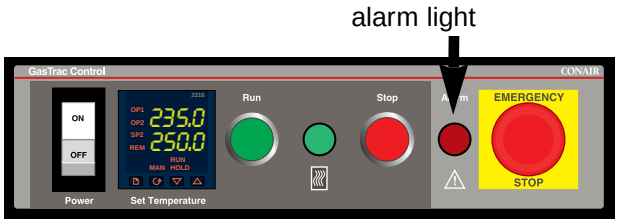
The flue gas high temperature switch monitors the temperature of a type J thermocouple mounted in the flue gas outlet. When the combustion exhaust gas temperature exceeds 800˚F, the GasTrac shuts down and the alarm light illuminates.



Alarm	Possible cause	Solution
The control panel alarm light is on, but no other controller alarm messagesor lights are displayed. ⚠ **WARNING:** The GasTrac should be tested and repaired only by qualified technicians equipped with the correct tools and trained in the maintenance and repair of electrical systems and industrial gas appliances.	**Is the temperature limit switch faulty?**	Push the reset button on the GasTrac electrical enclosure and restart the GasTrac. If the alarm occurs again, a qualified electrician should verify that the latching alarm contacts of the flue gas high temperature limit switch are closed.
	Does the combustion air/fuel train need tuning?	This must be done by a qualified technician who is trained in the maintenance of industrial gas appliances, and who is familiar with tuning procedures outlined in the various controller, valve and switch manuals that came with the GasTrac. If the alarm persists, call the Conair Service Department.

PROCESS HIGH TEMPERATURE LIMIT SWITCH

The process high temperature switch monitors the temperature of a type J thermocouple mounted in the GasTrac process air outlet. If the process air outlet temperature exceeds 450˚ F, the GasTrac shuts down and the alarm light illuminates.



Alarm	Possible cause	Solution
The control panel alarm light is on, but no other controller alarm messagesor lights are displayed. ⚠ **WARNING:** The GasTrac should be tested and repaired only by qualified technicians equipped with the correct tools and trained in the maintenance and repair of electrical systems and industrial gas appliances.	**Is something blocking or restricting the flow of drying, or process, air?**	❒ Check the process filter in the host dryer. Clean or replace the filter if it is clogged or damaged. ❒ Check the process air hoses for leaks, crimps, blockage or loose connections. Remove obstructions. Repair leaks or loose connections. ❒ Make sure the process air blower in the host dryer is running correctly.
	Is the drying temperature setpoint incorrect?	Check the setpoint on the temperature controller. Enter a new setpoint, if necessary. Press the reset button on the GasTrac electrical enclosure and restart the GasTrac.
	Is the temperature limit switch faulty?	Press the reset button on the GasTrac electrical enclosure and restart the GasTrac.If the alarm occurs again, a qualified electrician should verify that the latching alarm contacts of the process high temperature limit switch are closed.
	Is the temperature controller faulty?	If the alarm persists, replace the temperature controller.

We're Here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

How to Contact Customer Service

To contact Customer Service personnel, call:

24 HOURS A DAY • 7 DAYS A WEEK

From outside the United States, call: 814-437-6861

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department. Standard rates include an on-site hourly rate, with a one-day minimum plus expenses.

Before You Call ...

If you do have a problem, please complete the following checklist before calling Conair:

- ❒ Make sure you have all model, serial and parts list numbers for your particular equipment. Service personnel will need this information to assist you.
- ❒ Make sure power is supplied to the equipment.
- ❒ Make sure that all connectors and wires within and between control systems and related components have been installed correctly.
- ❒ Check the troubleshooting guide of this manual for a solution.
- ❒ Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.
- ❒ Check that the equipment has been operated as described in this manual.
- ❒ Check accompanying schematic drawings for information on special considerations.

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Departments for a nominal fee.

EQUIPMENT GUARANTEE

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

PERFORMANCE WARRANTY

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid.

Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

WARRANTY LIMITATIONS

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.